***CLASS COPY – DO NOT WRITE ON***

CW20: Reflections Over / Lines

**Geometry**

Pre-write/Prework

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| P0. What what be true to justify that a reflection has occurred? What process would you use to prove that information?  How might your process change if you were working with diagonal lines in the coordinate plane? | |
| P1.  a. What is the slope of the line y = x? What is the y-intercept of the line y = x?  b. Graph the line y = x in your notebook.  c. Predict what quadrant (I, II, III, IV) the image of each point would be if the point were reflected over the line y = x. Explain why you made that prediction for each point.  *Points: A(-4,4), B(4,-4), C(3,2), D(-2,-2)*  d. If a point is reflected, do you think that the pre-image and image should lie on the same line? How could you prove that they are, in fact, on the same line? | |
| Graph of the image of the figure using the transformation given and label the coordinates. | |
| 1. D(-5,4); Reflection across y = x | 1. S(1,-5); Reflection across y = x |
| 1. Prove that each reflected image you graphed above is equidistant from the line of reflection. | |
| Perform the transformation given, then prove that the pre-image and image are equidistance from the line of reflection. | |
| 1. K(-2,3); Reflection across y = x | 1. A(-1,-6); Reflection across y= x |
| 1. N(3,-1)U(2,-4)H(1,-3); Reflection across y = x | 1. P(1,1)E(1,0)K(3,0)Y(-1,-3);Reflection across y = x |

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| Graph the image of the figure using the transformation given and label the coordinates. | |
| Find the image of the line segment , such that  A(-2,6) and B(-2,2) after it is reflected across y = x | Find the image of the line segment  **,** such that D(1,2) and C(4,6) after it is reflected across y = x |

Challenge question!  
C1. Suppose you want to perform a Reflection of the point *K*(0,4) over the line y= 2x + 1.

1. What is the difference between this problem and the one you solved above?
2. How will this difference change your process?
3. Try to perform this transformation!